IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: Doss Ir. et al. Application No: 10/810,082 Filed: March 26, 2004 Title: Adaptive Duplex for Amplified Telephone	Atty. Dkt. No. 02-1757 Examiner: Briney III, Walter F Assignee: Plantronics, Inc. Art Unit: 2615

REPLY BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is a corrected Reply Brief in response to the Notification of Non-Compliant Appeal Brief dated January 12, 2010.

I. Real Party In Interest

The real party in interest is Plantronics, Inc. The subject patent application was assigned from appellants to P1antronics, Inc.

II. Related Appeals and Interferences

There are currently no known appeals or interferences which may directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 1-27 are rejected. Claims 1-27 are being appealed.

IV. Status of Amendments

No amendments to the claims were filed subsequent to the final rejection. Thus, the appeal is being taken on the basis of claims 1-27 as finally rejected, as presented in

Claims Appendix A submitted herewith.

V. Summary of Claimed Subject Matter

The inventions are generally directly to a telephone system (independent claim 1 and claims dependent therefrom), an amplified telephone (independent claim 10 and claims dependent therefrom), and an adaptive duplexing method (independent claim 19 and claims dependent therefrom). The independent claims are illustrated in FIGS. 2-3 and generally described at paragraphs [0007], [0011], and [0012].

Independent claim 1 recites a telephone system that generally includes a transmitter (e.g., a microphone 124, paragraph [0029], line 1), in communication with a transmit signal path, a receiver (e.g., speaker, paragraph [0034], third line from the end on page 13) in communication with a receive signal path, the receiver having associated therewith a receiver gain, a receiver gain detector configured to detect the receiver gain (paragraph [0035], lines 1-2; paragraph [0036], lines 3-6), the telephone system having a receiver stability level associated therewith (paragraph [0032], lines 3-5), and a controller (e.g., microprocessor unit 120, paragraph [0035], lines 1-2) in communication with the receiver gain detector, the controller being configured to selectively operate the telephone system in a full duplex mode in response to the receiver gain being approximately less than the receiver stability level (paragraph [0036], lines 1-9) and to selectively operate the telephone system in an adaptive duplex mode in response to the receiver gain being approximately above the receiver stability level (paragraph [0036], lines 9-14), the adaptive duplex mode being such that an adaptive attenuation level alternately applied on the receive signal and transmit signal paths is dependent upon the level by which the receiver gain exceeds the receiver stability level (paragraph [0037]).

Independent claim 10 recites an amplified telephone that generally includes means for detecting a receiver gain level selected by a user on the amplified telephone (paragraph [0035], lines 1-2; paragraph [0036], lines 3-6), the telephone having a receiver stability level associated therewith (paragraph [0032], lines 3-5), means for controlling the telephone to selectively operate in full duplex in response to the receiver gain level being approximately less the receiver stability level (paragraph [0036], lines 1-9) and to

selectively operate in adaptive duplex in response to the receiver gain being at least the receiver stability level (paragraph [0036], lines 9-14). the adaptive duplex being such that an adaptive attenuation level alternately applied on a receive signal path and a transmit signal path is dependent upon a level by which the receiver gain level exceeds the receiver stability level (paragraph [0037]).

Independent claim 19 recites an adaptive duplexing method that generally includes detecting a receiver gain level selected by a user on a telephone (paragraph [0035], lines 1-2; paragraph [0036], lines 3-6). the telephone having a receiver stability level associated therewith (paragraph [0032], lines 3-5), and controlling the telephone to selectively operate in full duplex in response to the receiver gain level being approximately less than the receiver stability level (paragraph [0036], lines 1-9) and to selectively operate in adaptive duplex in response to the receiver gain being at least the receiver stability level (paragraph [0036], lines 9-14). the adaptive duplex being such that an adaptive attenuation level alternately applied on a receive signal path and a transmit signal path of the telephone is dependent upon a level by which the receiver gain level exceeds the receiver stability level (paragraph [0037]).

VI. Grounds Of Rejection To Be Reviewed On Appeal

In the final rejection, the Examiner rejected claims 1-27 under 35 U.S.C. 103(a) as being unpatentable over Naddell (USPN 5,450,618) in view of Arnaud (US Pat. RE 36,934).

Accordingly, the issue on appeal is:

whether claims 1-27 are unpatentable over Naddell in view of Arnaud.

VII. Response to Examiner's Answer

A. Introduction

The inventions are generally directly to a telephone system (independent claim 1 and claims dependent therefrom), an amplified telephone (independent claim 10 and claims dependent therefrom), and an adaptive duplexing method (independent claim 19

and claims dependent therefrom). The telephone system that generally includes a transmitter in communication with a transmit signal path, a receiver in communication with a receive signal path, a receiver gain detector configured to detect a receiver gain associated with the receiver, and a controller in communication with the receiver gain detector, the controller being configured to selectively operate the telephone system in a full or adaptive duplex mode in response to the receiver gain being approximately less than or approximately above a receiver stability level associated with the telephone system, respectively, the adaptive duplex mode being such that an adaptive attenuation level alternately applied on the receive signal and transmit signal paths is dependent upon the level by which the receiver gain exceeds the receiver stability level.

The amplified telephone generally includes means for detecting a receiver gain level selected by a user on the amplified telephone, means for controlling the telephone to selectively operate in full or adaptive duplex as generally described above.

The adaptive duplexing method generally includes detecting a receiver gain level selected by a user on a telephone, and controlling the telephone to selectively operate in full or adaptive duplex as generally described above.

B. <u>The Board should not affirm the rejections because Naddell does not disclose a processor that selects a mode of operation based on a user selected gain being approximately above or below a receiver stability level .</u>

Claims 1-27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Naddell (USPN 5,450,618) in view of Arnaud (US Pat. RE 36,934).

Independent claim 1 generally recites a telephone system that includes a controller that selectively operates the telephone system in (a) a full duplex mode *in response to* the receiver gain being approximately less than the receiver stability level or (b) in an adaptive duplex mode *in response to* the receiver gain being approximately above the receiver stability level. In other words, the controller selectively operates the telephone system in a full or adaptive duplex mode in response to the receiver gain being approximately less than or above the receiver stability level. It is the controller that makes the selection as to operate the telephone in full versus adaptive duplex mode. As is evident, such operation of the telephone is clearly not in response to user selection of

full versus half duplex mode.

The Examiner argues that Naddell discloses a "user can push the mode switch to raise and lower it between an extended position and a depressed position. *Id.* at col. 2 ll. 64-68, col. 3 ll.1-9. [This] method of positioning causes two significant changes in the telephone. The first is to alter the gain applied to signal output by the telephone's receiver 103. *Id.* at col 3 ll. 5-9. The second is to vary the mode of communication between full-duplex and half duplex. *Id.* Because these two changes occur together automatically based on the vertical position of the mode switch, the cause-and-effect relationship between receiver gain and communication mode is rendered ambiguous."

However, these two changes are not ambiguous. The Examiner is incorrect in his understanding that these changes occur together automatically based on the vertical position of the mode switch because Naddell discloses in FIG. 4 that these changes occur separately. According to the block diagram in FIG 4, the following steps occur when the mode switch is depressed to activate the full duplex mode: 1) block 402 (Mode Button In?) → Yes→block 403 (Set Mode =Full Duplex) → block 404 (Set Speaker to Preset Low Level) →block 405(End Mode?). Before the volume is set to the Preset Low Level, the processor must determine if the mode button is in. According to Naddell, it is not feasible for the processor to switch the communication unit to full duplex mode by determining if the volume is at a low-gain setting as contemplated by the Examiner. In order to switch the communication unit to full duplex mode the processor must *first* determine if the mode button is in. When this determination is made *then* the receiver level is set to a low gain setting (Preset Low Level).

The same argument above follows when the half duplex mode is activated. The following steps occur when the mode switch is not depressed: block 402 (Mode Button In?) →No→block 406 (Set Mode = Half Duplex/ Read Rotary Position)→block 407 Rotary Fully Counter-Clockwise?) →Yes→ block 408 (Set Volume Corresponding To Rotary Position). Again, before the volume is set to Set Volume Corresponding To Rotary Position, the processor must *first* determine if the mode button is in. Therefore, it is not feasible for the invention disclosed in Naddell to switch modes of communication based on the volume setting. The way the invention disclosed in Naddell is to switch modes of communication from full duplex to half duplex or vice versa is for the user to

manually depress or not depress the mode button and for the processor to detect whether the mode button is in or not. The volume/gain setting in the invention disclosed in Naddell simply does not and can not switch the modes of communication as contemplated by the Examiner.

The Examiner further argues "Although, the Appellant is correct that Naddell does not control the telephone's volume based on the rotary position of a mode switch when the switch is depressed and the telephone subsequently operates in full-duplex mode, that is an irrelevant consideration. Naddell sets the telephone to a particular volume level when the mode switch is depressed, and causes the telephone to operate in full-duplex mode. As discussed *supra*, because these two variables change together, they have an ambiguous cause-and-effect relationship" (Examiner's Answer pgs 12-13). Here the Examiner's argument does not hold since as mentioned above, the two variables do not change together and are not ambiguous. Therefore the Examiner's argument is incorrect.

The Examiner further argues "mode selection in Naddell occurs based on the gain setting associated with the vertical position of the mode selection switch". Here the Examiner is again incorrect since as discussed above, the mode selection is based on whether the mode button is depressed or not depressed. The mode of selection is not based on the gain setting. To further clarify, for example in Naddell, a user in half duplex mode could set the volume above or below a gain stability level and the mode of communication will not change. Therefore the mode selection in Naddell is not based on the gain setting but rather on whether the mode button is depressed or not depressed. Furthermore, claim 1 recites that the controller selectively operates the telephone system in full duplex mode in response to the receiver gain being approximately less than the receiver stability level and to selectively operate the telephone system in an adaptive duplex mode in response to the receiver gain being approximately above the receiver stability level.

Naddell does not teach or suggest operating a telephone system in full duplex mode or adaptive duplex mode in response to whether the receiver gain is *less than or above the receiver stability level.* Nowhere does Naddell even mention a receiver stability level, much less teach operating a telephone system in full duplex mode or

adaptive duplex mode in response to whether the receiver gain is *less than or above the receiver stability level.*

Examiner states that Naddell teaches that the Naddell communications unit is operated in half-duplex mode when the receiver level is set to a high-gain setting, and Examiner argues that Naddell therefore teaches the communications unit is operated in half-duplex mode when the receiver gain is above the receiver stability level. Examiner Answer at page 3, lines 8-13. Applicant respectfully submits that there is simply no support for such a leap in the teachings of Naddell. As previously mentioned, Naddell is completely silent regarding receiver stability level. There is no teaching in Naddell that the user adjustable volume settings in half duplex mode are *necessarily* above the receiver stability level. As such, while operating in half duplex mode, the user adjustable volume setting in the Naddell communication unit may be below the receiver stability level. Thus, Naddell simply does not teach selectively operating the telephone system in full duplex mode in response to the receiver gain being approximately less than the receiver stability level and selectively operating the telephone system in an adaptive duplex mode in response to the receiver gain being approximately above the receiver stability level as taught by claim 1.

Examiner further argues that claim 1 fails to include specifics as to how the controller compares the receiver gain against the receiver stability level. Examiner also argues that the claim fails to specify how the receiver gain level is ascertained. Examiner argues that claim 1 therefore includes broad limitations. Examiner Answer at page 10, lines 6-13. Applicant respectfully submits that such arguments are irrelevant to the obviousness rejection under 35 U.S.C. 103(a) at issue and whether Naddell discloses the limitations of claim 1. Even if the limitations set forth in claim 1 are considered "broad", a broad limitation is patentable if it is not taught or suggested by the prior art. For the reasons described above, Naddell does not teach or suggest comparing the receiver gain against the receiver stability level.

Independent claims 10 and 19 recite elements similar to those discussed above with reference to independent claim 1. Thus the discussion above similarly applies to independent claims 10 and 19 and is not repeated herein for purposes of clarity.
In view of the foregoing, Nadell in view of Arnaud does not render the claimed

inventions unpatentable under 35 U.S.C. §103(a).

Reversal of the rejection of dependent claims 1-27 is therefore requested.

C. Conclusion

In view of the foregoing, reversal of the rejection of claims 1-27 is requested. In the unlikely event that the transmittal letter accompanying this document is separated from this document and the Patent Office determines that an Extension of Time under 37 CFR 1.136 and/or any other relief is required, Applicant hereby petitions for any required relief including Extensions of Time and/or any other relief and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 50-2315 (Order No. 02-1757).

Dated:

Respectfully submitted,

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Attached: Claims Appendix A (Copy of claims 1-27 involved in the subject Appeal; 6 pages), Evidence Appendix B and Related Proceedings Appendix.

VIII.

Claims Appendix A
Pending Claims 1-27

1. A telephone system, comprising:

a transmitter in communication with a transmit signal path;

a receiver in communication with a receive signal path, the receiver having associated therewith a receiver gain;

a receiver gain detector configured to detect the receiver gain, the telephone system having a receiver stability level associated therewith; and

a controller in communication with the receiver gain detector, the controller being configured to selectively operate the telephone system in a full duplex mode in response to the receiver gain being approximately less than the receiver stability level and to selectively operate the telephone system in an adaptive duplex mode in response to the receiver gain being approximately above the receiver stability level, the adaptive duplex mode being such that an adaptive attenuation level alternately applied on the receive signal and transmit signal paths is dependent upon the level by which the receiver gain exceeds the receiver stability level.

2. The telephone system of claim 1, wherein the attenuation level alternately applied on the receive signal and transmit signal paths is approximately equal to the level by which the receiver gain exceeds the receiver stability level.

3. The telephone system of claim 1, wherein the receiver gain detector is configured to monitor the receiver gain throughout a telephone call and the controller adapts the attenuation level in accordance with the monitored receiver gain.

4. The telephone system of claim 1, further comprising a volume control by which a user may select a volume setting and a boost function selector by which the user

may activate and deactivate a boost function, wherein the receiver gain detector is in communication with the volume control and the boost function selector and wherein the receiver gain is a function of the volume setting and the status of the boost function.

5. The telephone system of claim I, wherein when the controller is operating in the adaptive duplex mode, the controller is further configured to switch between an active receive mode during which the controller applies the adaptive attenuation level on the transmit signal path and an active transmit mode during which the controller applies the adaptive attenuation level on the receive signal path.

6. The telephone system of claim 5, further comprising a transmit signal detector configured to detect a transmit path signal level on the transmit signal path, the transmit signal detector being in communication with the controller, wherein when in the adaptive duplex mode, the controller is alternately in the active receive mode and the active transmit mode depending upon the transmit path signal level.

7. The telephone system of claim 6, wherein when in the adaptive duplex mode, the controller is configured to switch to the active transmit mode when the transmit path signal level is at least equal to a predefined transmit signal threshold and to switch to the active receive mode when the transmit path signal level is less than the transmit signal threshold.

8. The telephone system of claim 1, wherein the full duplex mode is such that the controller applies zero attenuation to signals on the receive signal path and to signals on the transmit signal path.

9. The telephone system of claim 1, wherein the receiver stability level is between approximately 30 and 35 dB of gain.

10. An amplified telephone, comprising:

means for detecting a receiver gain level selected by a user on the amplified

telephone, the telephone having a receiver stability level associated therewith; and

means for controlling the telephone to selectively operate in full duplex in response to the receiver gain level being approximately less the receiver stability level and to selectively operate in adaptive duplex in response to the receiver gain being at least

the receiver stability level, the adaptive duplex being such that an adaptive attenuation level alternately applied on a receive signal path and a transmit signal path is dependent upon a level by which the receiver gain level exceeds the receiver stability level, the controlling means being in communication with the receiver gain detector.

11. The amplified telephone of claim 10, wherein the attenuation level alternately applied on the receive and transmit signal paths is approximately equal to the level by which the receiver gain exceeds the receiver stability level.

12. The amplified telephone of claim 10, wherein the means for detecting monitors the receiver gain throughout a call on the amplified telephone and the means for controlling adapts the attenuation level in accordance with the monitored receiver gain level.

13. The amplified telephone of claim 10, wherein the means for detecting detects the receiver gain level as a function of a user-selected volume setting and a user-selected boost function status.

14. The amplified telephone of claim 10, wherein the controlling means switches between an active receive mode and an active transmit mode when operating the telephone in adaptive duplex, the active receive mode being that the controlling means applies the adaptive attenuation level on transmit signals on the transmit signal path and

the active transmit mode being that the controlling means applies the adaptive attenuation level on receive signals on the receive signal path.

15. The amplified telephone of claim 14, further comprising a transmit signal detecting means for detecting a transmit path signal level on the transmit signal path, the transmit signal detecting means being in communication with the controlling means, wherein when operating in adaptive duplex, the controlling means is alternately in the active receive mode and the active transmit mode depending upon the transmit path signal level.

16. The amplified telephone of claim 15, wherein when in adaptive duplex, the
controlling means is configured to switch to the active transmit mode when the transmit path signal level is at least equal to a predefined transmit signal threshold and to switch to the active receive mode when the transmit path signal level is less than the transmit signal threshold.

17. The amplified telephone of claim 10, wherein operating in full duplex is such that the controlling means applies zero attenuation to signals on the receive signal path and to signals on the transmit signal path.

18. The amplified telephone of claim 10, wherein the receiver stability level is between approximately 30 and 35 dB of gain.

19. An adaptive duplexing method, comprising:

detecting a receiver gain level selected by a user on a telephone, the telephone having a receiver stability level associated therewith; and

controlling the telephone to selectively operate in full duplex in response to
the receiver gain level being approximately less than the receiver stability level and to

selectively operate in adaptive duplex in response to the receiver gain being at least the receiver stability level, the adaptive duplex being such that an adaptive attenuation level alternately applied on a receive signal path and a transmit signal path of the telephone is dependent upon a level by which the receiver gain level exceeds the receiver stability level.

20. The method of claim 19, wherein the attenuation level alternately applied on
the receive signal and transmit signal paths is approximately equal to the level by which the receiver gain exceeds the receiver stability level.

21. The method of claim 19, wherein the detecting includes monitoring the receiver gain throughout a call on the telephone and the controlling includes adapting the attenuation level in accordance with the monitored receiver gain level.

22. The method of claim 19, wherein the detecting includes detecting the receiver gain level as a function of a user-selected volume setting and a user-selected boost function status.

23. The method of claim 19, wherein the controlling includes switching between
an active receive mode and an active transmit mode when operating the telephone in adaptive duplex, the active receive mode being that the controlling includes applying the adaptive attenuation level on transmit signals on the transmit signal path and the active transmit mode being that the controlling includes applying the adaptive attenuation level on receive signals on the receive signal path.

24. The method of claim 23, further comprising detecting a transmit path signal
level on the transmit signal path, wherein when in adaptive duplex, the controlling

includes alternating between the active receive mode and the active transmit mode depending upon the transmit path signal level.

25. The method of claim 24, wherein when in the adaptive duplex, the controlling includes switching to the active transmit mode when the transmit path signal level is at least equal to a predefined transmit signal threshold and switching to the active receive mode when the transmit path signal level is less than the transmit signal threshold.

26. The method of claim 19, wherein when in full duplex, the controlling includes applying zero attenuation on the receive signal path and the transmit signal path.

27. The method of claim 19, wherein the receiver stability level is between approximately 30 and 35 dB of gain.

IX.

Evidence Appendix B

Not Applicable.

X.

Related Proceedings Appendix

Not Applicable.